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10/666,647	09/19/2003	Young Dae Lee	2101-3053	8504
	7590 04/14/200 DEGERMAN. KANG &	4/2008 NG & SCHMADEKA		
660 S. FIGUEROA STREET			HOANG, HIEU T	
Suite 2300 LOS ANGELES, CA 90017			ART UNIT	PAPER NUMBER
			2152	
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			04/14/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)				
Office Action Comments	10/666,647	LEE ET AL.				
Office Action Summary	Examiner	Art Unit				
	HIEU T. HOANG	2152				
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	orrespondence ad	dress			
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DA  - Extensions of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication.  - If NO period for reply is specified above, the maximum statutory period w  - Failure to reply within the set or extended period for reply will, by statute, Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 6(a). In no event, however, may a reply be timil apply and will expire SIX (6) MONTHS from cause the application to become ABANDONEI	J. ely filed the mailing date of this co O (35 U.S.C. § 133).				
Status						
1) Responsive to communication(s) filed on 17 Ma	arch 2008					
• • • • • • • • • • • • • • • • • • • •	action is non-final.					
	<del>-</del>					
	closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.					
·	x parto Quayro, 1000 0. <b>D</b> . 11, 10	.0 0.0. 210.				
Disposition of Claims						
4) Claim(s) is/are pending in the application	า.					
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6) Claim(s) <u>1-6,8-10,12,13,16,18-25,28,30,32,34,35,39,41,42,51-56,71,72,74 and 75</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/or election requirement.						
	·					
Application Papers						
9)☐ The specification is objected to by the Examiner.						
10)⊠ The drawing(s) filed on <u>19 September 2003</u> is/are: a)⊠ accepted or b)⊡ objected to by the Examiner.						
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).						
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.						
Priority under 35 U.S.C. § 119						
12)⊠ Acknowledgment is made of a claim for foreign	priority under 35 U.S.C. § 119(a)	-(d) or (f).				
a)⊠ All b)□ Some * c)□ None of:		(4) -: (.).				
1. Certified copies of the priority documents	s have been received					
2. Certified copies of the priority documents		on No				
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<del>_</del>	•	u III tilis National	Stage			
application from the International Bureau	• • • • • • • • • • • • • • • • • • • •	٦.				
* See the attached detailed Office action for a list of the certified copies not received.						
Attachment(s)						
1) Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413)						
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  Paper No(s)/Mail Date  Notice of Informal Patent Application						
Paper No(s)/Mail Date <u>12/19/07, 12/21/06</u> .						

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## **DETAILED ACTION**

1. This office action is in response to the communication received on 03/17/2008.

2. Claims 7, 11, 14, 15, 17, 26, 27, 29, 31, 33, 36-38, 40, 43-50, 57-70, 73, 76-80 have been canceled.

3. Claims 1-6, 8-10, 12, 13, 16, 18-25, 28, 30, 32, 34, 35, 39, 41, 42, 51-56, 71, 72, 74, and 75 are pending.

## Response to Arguments

- 4. Applicant's arguments on the U.S.C. 103 rejection have been fully considered but they are not persuasive.
- 5. Applicant argues that Leung-AAPA does not teach "the PDCP entity located within an SRNC in case of a point-to-point manner and within a CRNC in case of a point-to-multipoint manner; wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) and one PDCP entity exists in the CRNC for each MBMS service in case of the point-to-multipoint manner." The examiner respectfully traverses.
- 6. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

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7. Leung teaches an internet protocol header compression is performed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

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## Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 9. Claims 1-6, 8-10, 12, 13, 16, 18-25, 28, 30, 32, 34, 35, 39, 41, 42, 51-56, 71, 72, 74, and 75 are rejected under 35 U.S.C. 102(e) as being unpatentable over Leung et al. (US 2003/0087653, hereafter Leung) in view of Applicant Admitted Prior Art (background of the invention in the application, also including figures 1-5, identified as Prior Art and description of these figures, hereafter AAPA).
- 10. For claim 1, Leung discloses a method for providing point-to-multipoint services in a radio communication system (abstract), the method comprising:
  - performing Internet protocol header compression to form header compressed data (figure 4 step t3, [0065] lines 9-14, [0068] lines 5-6) in a robust header compression (ROHC) entity located within a packet data service node (PDSN)),
  - transmitting the header compressed data in at least one of a point-to-point
     manner and in a point-to-multipoint manner depending upon a threshold value, to

one or more users of the radio communication system ([0111] lines 9-14, and [0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or point-to-multipoint channel as in fig. 15B).

- wherein the internet protocol header compression is performed in a ROHC within a PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and
- wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Leung with the teachings of AAPA to substitute a ROHC with a PDCP and a PDSN with a CRNC to apply Leung's teachings to the UMTS

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mobile environment of AAPA and also to conserve transmission resources by using individual dedicated channels rather than using the broadcast channel (or vice versa) (Leung [0115] lines 8-14).

- 11. For claim 18, Leung discloses method of receiving data of a point-to-multipoint service in a radio communication system (abstract), the method comprising:
  - receiving header compressed data ([0068] lines 1-6) in at least one of a point-to-point manner and a point-to-multipoint manner depending upon a threshold value ([0111] lines 9-14, and [0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or point-to-multipoint channel as in fig. 15B);
  - decompressing the received header compressed data to allow a user to access the point-to-multipoint service ([0068] lines 9-12).
  - wherein the internet protocol header compression is performed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and
  - wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

- 12. For claim 28, Leung discloses in a radio communication system for providing and receiving data of a point-to-multipoint service (abstract), a radio network controller comprising:
  - a header compressing portion that performs Internet protocol header
     compression to form header compressed data (figure 4 step t3, [0065] lines 9-14,
     [0068] lines 2-4, robust header compression ROHC compresses IP data headers in a PDSN); and

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a transmitting portion, operably connected with the header compressing portion, that transmits the header compressed data in point-to-point manner and in at least one a point-to-multipoint manner depending upon a threshold value, to one or more users of the radio communication system ([0111] lines 9-14, and [0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or point-to-multipoint channel as in fig. 15B);

- wherein the internet protocol header compression is performed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and
- wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point

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manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

- 13. For claim 35, Leung discloses in a radio communication system for providing and receiving data of a point-to-multipoint service (abstract), a user equipment comprising:
  - a receiving portion, that receives in a point-to-point manner and in a point-to-multipoint manner, Internet protocol header compressed data ([0068] lines 1-5, a mobile station MS receives header compressed data, [0111] lines 9-14 and [0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or point-to-multipoint channel as in fig. 15B);
  - a header decompressing portion operatively connected with the receiving portion,
     the header decompressing portion decompressing the header compressed data
     to access the point-to-multipoint service ([0068] lines 9-12).

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 wherein the header compressed data is formed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-tomultipoint manner ([0068] lines 5-8), and

wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

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14. For claim 42, Leung discloses a method for providing point-to-multipoint services in a radio communication system (abstract), the method comprising:

- performing Internet protocol header compression to form header compressed data (figure 4 step t3, [0065] lines 9-14, [0068] lines 5-6) in a robust header compression (ROHC) entity located within a packet data service node (PDSN),
- transmitting the header compressed data in at least one of a poin-to-point manner and a point-to-multipoint manner according to a type of point-tomultipoint service to one or more users in the radio communication system ([0112] lines 1-7, a broadcast channel BC is a point-to-multipoint or point-tomultipoint channel as in fig. 15B).
- wherein the internet protocol header compression is performed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and
- wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

- 15. For claim 51, Leung discloses a method of providing Internet protocol header information to a plurality of terminals in a wireless communication system (abstract), the method comprising:
  - performing header compression of Internet protocol header information to form
     compressed header data (figure 4 step t3, [0065] lines 9-14, [0068] lines 5-6);
  - transmitting the compressed header data to at least one terminal of the communication system in at least one of a point-to-point manner and a point-tomultipoint manner depending upon a threshold value ([0111] lines 9-14, and

[0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or point-to-multipoint channel as in fig. 15B).

- wherein the internet protocol header compression is performed in a robust header compression protocol ROHC within a packet data service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and
- wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

Therefore, it would have been obvious for one skilled in the art at the time of the invention to combine the teachings of Leung with the teachings of AAPA to substitute a ROHC with a PDCP and a PDSN with a CRNC to apply Leung's teachings to the UMTS

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mobile environment of AAPA and also to conserve transmission resources by using individual dedicated channels rather than using the broadcast channel (or vice versa) (Leung [0115] lines 8-14).

- 16. For claim 71, Leung discloses a wireless communication system for providing internet protocol header information to a plurality of terminals (abstract), the wireless communication system comprising:
  - a header compression module adapted to receive internet protocol header information from an internet protocol module and compress the internet protocol header information to form compressed header data (figure 4 step t3, [0065] lines 9-14, [0068] lines 5-6);
  - a transmitting module adapted to transmit the compressed header data to at least one user of the communication system in at least one of a point-to-point manner and a point-to-multipoint manner depending upon a threshold value ([0111] lines 9-14, and [0112] lines 1-7, a dedicated channel is a unicast or a point-to-point channel, a broadcast channel BC is a point-to-multipoint or pointto-multipoint channel as in fig. 15B); and
  - a receiving module adapted to receive and decompress the compressed header data ([0068] lines 9-12);
  - wherein header compression of the internet protocol header compression is
     performed in a robust header compression protocol ROHC within a packet data

service node PDSN in case of the point-to-multipoint manner ([0068] lines 5-8), and

wherein the point-to-multipoint service is a multimedia broadcast/multicast service (MBMS) ([0051] lines 1-4, HSBS is a point-to-multipoint service by the term "broadcast", also see figure 2 video audio content to be transmitted over a broadcast service), and one ROHC entity exists in the PDSN for each MBMS service in case of the point-to-multipoint manner ([0068] lines 5-8, ROHC in a PDSN).

Leung does not disclose: a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner, and a controlling radio network controller (CRNC).

However, AAPA discloses a packet data convergence protocol (PDCP) entity located within a serving radio network controller (SRNC) in case of the point-to-point manner (fig. 5, PDCP in a SRNC for point-to-point transmission to a user equipment UE via a dedicated transmission channel for unicast), and a CRNC (fig. 5, CRNC).

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17. For claims 2 and 74, Leung-AAPA discloses the invention as in claims 1 and 71. Leung-AAPA further discloses the point-to-point manner is employed if a total number of users within a cell is below the threshold value (Leung, fig. 16 steps 904, 910, and 912).

- 18. For claims 3 and 75, Leung-AAPA discloses the invention as in claims 1, 71. Leung-AAPA further discloses the point-to-multipoint manner is employed if a total number of users within a cell is at or above the threshold value (Leung, fig. 16 steps 904 and 906).
- 19. For claims 4, 30, Leung-AAPA discloses the invention as in claims 1, 28, and 35. Leung-AAPA further discloses the Internet protocol header compression is respectively performed for each type of MBMS service to be provided (Leung, figure 4 step t3, [0065] lines 9-14, [0068] lines 5-6).
- 20. For claims 5 and 19, Leung-AAPA discloses the invention as in claims 1 and 28. Leung-AAPA further discloses the point-to-point manner is transmitting data from a single sending point to a single receiving point (Leung, fig. 15A, each dedicated channel links between one BSC and 1 MS).
- 21. For claims 6 and 20, Leung-AAPA discloses the invention as in claims 5 and 19. Leung-AAPA further discloses the point-to-point manner is based upon a total number

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of users within a cell of the radio communication system (Leung, fig. 16 steps 904, 910,

and 912).

22. For claim 21, Leung-AAPA discloses the invention as in claim 19. Leung-AAPA further discloses the transmitting by point-to-point manner is via a dedicated channel (Leung, [0111] lines 9-14).

- 23. For claims 9, 22, 53, and 72, Leung-AAPA discloses the invention as in claims 1, 51, and 71. Leung-AAPA further discloses the point-to-multipoint manner is transmitting data from a single sending point to multiple receiving points (Leung, [0111] lines 1-3).
- 24. For claims 10 and 23, Leung-AAPA discloses the invention as in claims 9 and 22. Leung-AAPA further discloses the point-to-multipoint manner is based upon a total number of users within a cell of the radio communication system (Leung, fig. 16 steps 904 and 906).
- 25. For claims 13, Leung-AAPA discloses the invention as in claim 1. Leung-AAPA further discloses the header compression is performed at a central location for each type of MBMS service (Leung, [0033] lines 3-6 and [0068] lines 5-6, a PDSN is read as a central location).

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26. For claims 16 and 25, Leung-AAPA discloses the invention as in claims 1 and 18. Leung-AAPA further discloses a MBMS service is a service that is provided to a specified plurality of users (Leung, [0111] lines 1-5, a group call is a point-to-multipoint application to members of a group).

- 27. For claim 52, Leung-AAPA discloses the invention as in claim 51. Leung-AAPA further discloses header compression is performed once for the data transmitted to the plurality of terminals when the data is transmitted in the point-to-multipoint manner (Leung, [0068] lines 5-9, the PDSN provides header compression once using ROHC protocol).
- 28. For claim 54, Leung-AAPA discloses the invention as in claim 51. Leung-AAPA further discloses the threshold value is associated with a number of terminals (Leung, [0111] lines 9-14, and [0112] lines 1-7).
- 29. For claims 8 and 39, Leung-AAPA discloses the invention as in claim 5 and 35. Leung-AAPA further discloses the transmitting and receiving by point-to-point manner is via a dedicated channel (Leung, [0111] lines 9-14).
- 30. For claims 12, 24, 41, and 55, Leung-AAPA discloses the invention as in claims 9, 22, 35, and 51. Leung-AAPA further discloses the transmitting and receiving by point-to-multipoint manner is via a common channel (Leung, [0009] lines 13-15).

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31. For claim 32, Leung-AAPA discloses the invention as in claim 31. Leung-AAPA

further discloses the SRNC transmits via a dedicated transport channel (Leung, [0111]

lines 9-14).

32. For claim 34, Leung-AAPA discloses the invention as in claim 33. Leung-AAPA

further discloses the CRNC transmits via a common transport channel (Leung, [0009]

lines 13-15).

33. For claim 56, Leung discloses the invention as in claim 51. Leung does not

disclose at least part of the Internet protocol header information is not compressed.

However, AAPA discloses at least part of the Internet protocol header information

is not compressed (page 6 line 25 - page 7 line 5, only the absolutely necessary

information required in the header is compressed).

Therefore, it would have been obvious for one skilled in the art at the time of the

invention to combine the teachings of Leung with the teachings of AAPA to compress

only necessary portions of packet headers to conserve the system resources and time

because compressing and decompressing of information takes time and resources.

Conclusion

34. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hieu T. Hoang whose telephone number is 571-270-1253. The examiner can normally be reached on Monday-Thursday, 8 a.m.-5 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HH

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2152